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### Grief following homicidal loss

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# Chapter 2

## PSYCHOPATHOLOGY AMONG HOMICIDALLY BEREAVED INDIVIDUALS: A SYSTEMATIC REVIEW

Van Denderen, M., de Keijser, J., Kleen, M., & Boelen, P. A. (2015).  
Psychopathology among homicidally bereaved individuals: A systematic review.  
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## Abstract

In the literature on bereavement, claims are made that homicidal loss is associated with post-traumatic stress reactions, depression, and other severe mental health problems. It is surprising that only a few studies have investigated the nature and prevalence of emotional symptoms following homicidal bereavement and a reference to systematic, empirical research is seldom provided. This paper reviews the available literature to investigate whether these claims have empirical evidence. Three databases were searched to identify relevant studies. This approach was supplemented with a bibliography search. Eligible studies included English-language peer-reviewed articles that assessed psychopathology in the homicidally bereaved, as defined in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (American Psychiatric Association, 2000). Of the 360 potentially relevant articles, eight studies (thirteen references) met predefined inclusion criteria. Homicide-related psychopathology among the bereaved assessed in these studies includes Post-Traumatic Stress Disorder (PTSD), depression, Complicated Grief, and substance abuse. Prevalence of lifetime homicide-related PTSD varied from 19.1% to 71% across studies. Current PTSD varied between 5.2% and 6%. The reviewed literature was inconclusive regarding the course of symptoms over time and the severity of psychopathology among the homicidally bereaved, compared to individuals bereaved by other causes of death. A comparison of the nature and prevalence of psychopathology between studies was complicated by unequal sample sizes and type, recruitment strategy, study design and time since loss. Limitations of the included studies are discussed, as well as implications for clinical practice, policy, and future research.

**Keywords** homicide, murder, bereaved, grief, review, prevalence

## Key points of the research review

- This review suggests that homicidal bereavement is associated with an increased risk of adverse mental health outcomes. Results are not easily generalizable, because of differences between studies in ethnicity, sex and relationship with the deceased.
- Homicide-related psychopathology assessed includes PTSD, depression, Complicated Grief and substance abuse.
- Prevalence of lifetime homicide-related PTSD varied from 19.1% to 71% across studies. Current PTSD varied between 5.2% and 6%.
- The reviewed literature is inconclusive regarding the course of psychopathology over time and the severity of psychopathology among the homicidally bereaved, compared to non-victims, victims of interpersonal violence or individuals bereaved by suicide or accident.

- Included studies differed greatly in sample size and type, recruitment strategy, study design, time since loss and the relationship of the bereaved and the victim. Instead of a generalization across studies, the studies are compared and contrasted to each other on an individual level.
- When reviewing the literature, at least eleven synonyms were found in the literature to describe a population of individuals bereaved by homicide, including *loved one*, *surviving family members*, *co-victims of homicide* and *secondary victim*.

## Introduction

Murder and manslaughter are among the most severe criminal acts. Surviving family members, partners, and friends of the victim, have to deal with the emotional and psychological consequences of losing someone. In addition to the loss itself, these individuals must cope with the specific cause of the death, characterised by the violent and intentional nature of the act, involvement with the criminal justice system, media attention, and investigation by the police (Amick-McMullan, Kilpatrick, Veronen, & Smith, 1989; Kaltman & Bonanno, 2003; Parkes, 1993; Riches & Dawson, 1998; Rynearson, 1994; Sprang, 2001). The loss of a loved one and additionally the violent nature of the death may be associated with subsequent mental health problems. Some studies firmly state that homicidal bereavement is related to post-traumatic stress reactions, depression or other severe mental health problems: “there is ample evidence that loss due to homicide is associated with post-traumatic stress phenomena” (Freeman, Shaffer, & Smith, 1996; p. 337), “the few studies on the consequences of homicide for surviving family members are consistent in showing that homicide survivors, as the literature terms them, are traumatized greatly by the murder of a loved one” (Thompson, Norris, & Ruback, 1998, p. 224), and “Rather, losing a loved one to homicide is a chronic, never-ending trauma (...) Not only is the congruence in reported symptoms across studies striking, but so too is the gravity of symptomatology” (Thompson, 1995, pp. 3-4).

Considering the assumptions made in the literature, it is surprising that few studies have investigated the nature and prevalence of emotional symptoms following homicidal bereavement and reference to systematic, empirical research is seldom provided. For the bereaved community, it may be of considerable importance whether or not such claims are based upon empirical evidence. If these claims are not based upon such evidence, they may serve as a reinforcement for pathological behavior and catastrophizing cognitions. In theory, this may increase the subjective psychological pain or pathological behavior and may thereby even prolong the time in which the bereaved suffer from psychological complaints. If these claims do indeed reflect objective reality, this information can serve as a base for the development of clinical interventions for this population, such as developing individualized or more specialized treatments. Recently, a review was published regarding Post-Traumatic Stress Disorder (PTSD), depression and Complicated Grief (CG) after sudden and violent losses, including wars, natural disasters, airline disasters, accidents, suicide, homicide and natural death (Kristensen, Weisæth, & Heir, 2012). However, a

systematic review specifically on the psychopathology following homicidal loss has not yet been conducted. Consequently, it remains largely unclear if homicidal bereavement is associated with psychopathology.

The major aim of this article is therefore to critically review the available evidence regarding psychopathology experienced by the homicidally bereaved. The main questions which will be addressed are: which symptoms are reported, what is the prevalence rate and course of symptoms over time?<sup>1</sup> By defining the search terms, we did not specify any distinct disorder beforehand but chose to search as broadly as possible for any psychopathology classified in the DSM-IV<sup>2</sup>. Factors not classified as psychopathology in the DSM-IV, such as perceived social support, self-esteem and mental distress were not included. This choice was made to avoid pathologizing normal processes, such as the experience of mental distress after the loss of a loved one. An exception was made for dysfunctional grief, also termed complicated or prolonged grief (see for a review Boelen & Prigerson, 2012). While sharing some symptoms with disorders such as depression and PTSD, there is increasing recognition that symptoms of dysfunctional grief (including yearning, difficulty accepting the loss, avoidance of reminders) are distinct from these syndromes and are predictive of health impairments (Newson, Boelen, Hek, Hofman, & Tiemeier, 2011). While some symptoms of CG overlap with symptoms of PTSD, the separation distress component is unique for persons with CG. Moreover, individuals with PTSD or CG can both experience anxiety, but the form is different; PTSD typically includes threat-related anxiety, whereas CG includes mainly separation anxiety (Lichtenhal, Cruess, & Prigerson, 2004). Although depressive and CG symptoms are frequently comorbid, some symptoms are different. Preoccupation with thoughts of the deceased can be a symptom of CG but not of depression (Prigerson et al., 1995). Furthermore, CG and depression can occur independently. One study found that 46% of individuals diagnosed with CG did not meet criteria for major depressive disorder (Lichtenhal et al., 2004). Accordingly, a number of researchers propose to include a new CG diagnosis in DSM. Awaiting this discussion and possible inclusion in DSM, CG was included in our search.

## Method

### Sources

Three topics structured the search terms entered in the databases: (1) cause of death, (2) the bereaved, and (3) prevalence of homicide-related psychopathology. This resulted in the following search terms: homicide or murder or manslaughter AND \*surviv\* or \*bereav\* or grie\* AND psychopathology or epidemiology or prevalence or health. The electronic databases Psycinfo, Medline and Cochrane were searched in October 2012. English articles published until this point in time were taken into account. If the databases or RefWorks did not provide an online version of an article, it was searched utilizing Google.com. The following inclusion- and exclusion criteria were applied.

<sup>1</sup> The main focus of this review is psychopathology among the homicidally bereaved individuals. When studies compared psychopathology among the homicidally bereaved with the bereaved of natural or other violent loss, these results are mentioned in a subparagraph.

<sup>2</sup> Some studies date from 1991 and refer to criteria in the DSM-III. References to disorders in the DSM-III are included in this search as well.

### **Inclusion Criteria:**

1. The cause of death was homicide;
2. The bereaved were identified as partners, parents, children, brothers, sisters, grandparents, uncles, aunts, nieces, nephews and friends. Step- and adoptive family were also included;
3. Peer-reviewed studies, containing empirical, quantitative information about homicide-related psychopathology among the bereaved, using structured assessment methods; validated questionnaires and/or structured interviews following DSM-III or DSM-IV criteria.

### **Exclusion Criteria:**

1. Causes of death other than homicide;
2. Studies regarding homicide committed in the context of collective violence against Groups (e.g., war victims). Because collective violence may differ from individual violence on the psychological impact on the bereaved, studies examining violence against groups was excluded.

### **Search Strategy**

The search strategy consisted of two steps. First, using the aforementioned search terms, articles that met the inclusion criteria were selected from the databases. Second, relevance was based upon close reading of the abstract and article. The selection of studies was extended by screening reference lists of the included studies. The search was done by two researchers (MD, MK). The researchers independently classified the studies based upon the above mentioned steps. Articles found by only one of the two researchers were discussed with a third independent researcher (JK).

## **Results**

### **Search Results**

The search resulted in 360 articles. Eight studies (thirteen references) met inclusion criteria. Two additional references were included by screening reference lists of the original eight studies. These were not found by entering the search terms in the databases, probably because the title and abstract included several of the search terms, but not all<sup>3</sup>.

Table 1 lists the eight studies with information about their sample sizes, study population, sample type, and recruitment strategy, study design, comparison groups, average time since homicide, method, and quality of the study, outcome measure, social or demographic risk factors<sup>4</sup>, and main results.

<sup>3</sup> Three topics structured the search terms entered in the databases; cause of death, the bereaved, and prevalence of homicide-related psychopathology. Every topic included several synonyms. Eligible studies had to include at least one synonym from every topic.

<sup>4</sup> Risk factors that influence the chance of psychopathology are mentioned. Risk factors that influence the likelihood to experience a homicide or seek help are not mentioned. Furthermore, (significant) risk factors were only mentioned when they applied to homicidally bereaved. Risk factors which applied to a group of bereaved, for example homicide, suicide and accident together, are not included.

**Table 1.** Description of selected studies.

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality <sup>a</sup>	Outcome measure and Risk factors	Results
Amick- McMullan Kilpatrick Resnick (1991)	12,500 / 115 (0.9%)	Adult family- members <sup>b</sup> and close friends  Male: 2.2% Female: 67.8%  Ethnically divers <sup>c</sup>	National representative sample, recruited by a random digit dialing telephone survey to identify surviving family members and close friends.	Cross sectional Alcohol related vehicle accidents (n = 91)	16.6 years	Interview, using DSM III criteria A1	PTSD	Homicide bereaved: 19.1% met all three criteria for lifetime PTSD and 5.2% met current PTSD (alcohol related vehicle accidents respectively 27.5% and 4.4%)  No significant difference between both groups or between time and PTSD were found.

<sup>a</sup> A1 are quantitative studies, which report percentages regarding psychopathology. A2 are quantitative studies with report mean scores, but do not give a percentage of participants which met criteria for a diagnose. A3 are quantitative studies which compare psychopathology among homicidally bereaved with other bereaved, but without mentioning actual numbers.

<sup>b</sup> Family members is not further being defined by the authors.

<sup>c</sup> Per ethnicity: Black: 29.6%, white: 66.1%, native American: 2.6%, other: 0.9%, Hispanic: 0%

Table 1. (continued)

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Burke Neimeyer McDevitt- Murphy (2010)	54 / 54 (100%)	Adults; parents: 63% siblings: 13% Extended family: 13% spouse: 9.3% Remaining participant: 1.9%	Community based sample, African American adults (19-71), recruited by a religious organization that offers assistance to survivors of homicide in a large city in the Mid-South of US.	Cross sectional Non	1.75 years	PTSD Checklist- Civilian Version Beck Depression Inventory II Inventory of Complicated Grief- Revised A2	PTSD Depression Complicated Grief Size of support system Number of negative relations Grief specific support	PTSD: M = 36.59, SD = 15.33 Depression: M = 15.43, SD = 11.27 CG: M = 79.61, SD = 24.46  Large support system is associated to lower levels of CG. More actual negative relationships is related to higher levels of PTSD and CG. Grief specific support is associated with reduced PTSD and depression.
McDevitt- Murphy Neimeyer Burke Williams Lawson (2012)		Male: 11.1% Female: 88.9%  Ethnically homogenous				A1		18.5% screened positive for PTSD. 53.7% scored positive for at least mild depression. 54.5% screened positive for CG, 6 month post loss or more. > 6 month post loss; nearly all PTSD positive cases screened also positive for mild level depression and CG. < 2 years post loss; participants scored higher on PTSD and anxiety, than > 2 years. Time since loss was not associated with depression or complicated grief. Older people have lower PTSD rates. Lower income and frequent contact with the deceased relates to higher CG scores. Significant decrease in depression and CG scores over the 6-month study period, but not in PTSD symptoms.
Williams Burke McDevitt- Murphy Neimeyer (2012)	47/47 <sup>a</sup> (100%)			Longitudinal	6 month follow up	A2		

<sup>a</sup> 47 participants of the 54 grievers completed T2. Only data from study completers (T1 and T2) were included in this study. The distribution male/female and relation with the deceased between the 54 participants and 47 participants differs only slightly.



Table 1. (continued)

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Freedly Resnick Kilpatrick Dansky Tidwell (1994)	120 <sup>a</sup> / 62 (52%)	Adolescents and adults; family <sup>f</sup>  Male: 36.7% Female: 63.3%  Ethnically divers <sup>g</sup>	Community based sample; recruited by a review of court cases prior to 1988 in South Carolina and family members of victims from cases resulting in conviction and incarceration.	Cross sectional Physical assault Sexual assault	3 years <sup>h</sup>	Structured telephone interview A1	PTSD	71% report lifetime PTSD <sup>h</sup> No significant differences between the groups were found.

<sup>a</sup> The total number of participants in this study is 251. The sample consists of direct victims and co-victims of crime. Co-victims of homicide are a subsample of the total number of co-victims (120) Therefore, 120 is chosen as the total n.

<sup>f</sup> Age of the sample is not specified.

<sup>g</sup> This year relates to the average time since different types of crime, it is not specified to homicide.

<sup>h</sup> This percentage includes pre-homicide PTSD. Homicide-related PTSD could therefore be considered lower than 71%.

<sup>i</sup> This percentage concerns the whole sample, including crime victims. The percentage male/female among bereaved of homicide could be different.

<sup>j</sup> Per ethnicity: Caucasian: 62.5%, African American: 35.5%. This percentage also concerns the whole sample, including crime victims.

Table 1. (continued)

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Freeman Shaffer Smith (1996)	15 / 15 (100%)	African American or Latino siblings, age 7-18 years (M = 14.5), who lived at home with the non- caregiving victim	Community based sample, siblings of homicide victims aged 19 or under, identified by homicide reports of the New York City police department	Cross sectional Healthy classmates	5.4 months	Diagnostic interview schedule for children (DISC) A1	Depression PTSD	80% of the bereaved developed a disorder, compared to 10% of the control group. Most common were comorbid depressive, PTSD and anxiety disorders.

<sup>‡</sup> Per ethnicity: African American or Latino (black: 67%, other: 33%).

Table 1. (continued)

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Murphy et al., (1999; 2003a; 2003b) <sup>1</sup>	171/17 (10%)	Adult; parents  Male: 34.5% Female: 65.5% <sup>m</sup>  Ethnically divers <sup>n</sup>	Community based sample, age 32 – 61 (M = 45 years) Recruited by a review of official death records in Washington state and Oregon, U.S.	Longitudinal Suicide Accident	4 months Follow-up: 1, 2 and 5 years	Traumatic Experience Scale (TES) A1	PTSD  Gender	60% of the mothers and 40% of the fathers met PTSD criteria 4 months post death. PTSD prevalence among homicide bereaved is significantly higher than bereaved of suicide or accident.  Twice as many parents whose children were murdered met PTSD criteria two years post-loss compared to the control group.  The hypothesis that homicide bereaved report a slower reduction of PTSD complaints in a 5 year time-span than bereaved of suicide or accidents is not confirmed.  Mothers are more likely to develop PTSD than fathers.

<sup>1</sup> The three studies of Murphy et al. are based on one dataset and therefore grouped together. Authors categorized by article are: Murphy, Braun, Tillery, Cain, Johnson & Beaton, 1999; Murphy, Johnson, Chung & Beaton, 2003a; Murphy, Johnson, Wu, Fan & Lohan, 2003b.  
<sup>m</sup> This percentage concerns the whole sample, including parents whose child died through suicide or accident. The percentage male/female among bereaved of homicide could be different.  
<sup>n</sup> Per ethnicity: Caucasian: 86%, other: 14%. This percentage concerns the whole sample.

Table 1. (continued)

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Rheingold Zinzow Hawkins Saunders Kilpatrick (2012)	3614 / 333 (9.2%)	Young adults; family members and friends	National representative sample of 1753 young adults, age 12-17, participating in the 2005 National Survey of Adolescents	Cross sectional Vehicular homicide (7% of 3614)	Not mentioned	Modified version of the National Women's Study PTSD module.  NWS Depression Module A1	PTSD Depression Drug use Alcohol use	Current PTSD: 6% Past 6 month Depression: 8% Drug Use: 14% Alcohol Use: 10%  Prevalence rates of homicide bereaved on all four outcome measures were lower than among bereaved of vehicular homicide.  Prevalence of PTSD or depression did not differ per ethnicity.
Rynearson (1995)	237 / 32	Adult family members <sup>a</sup>	Treatment seeking sample The Support Project for Unnatural Dying was initiated in Seattle to offer support and early intervention for bereaved of homicide.	Cross sectional Adults who refused treatment	6-7 months	RIES A3	PTSD	Treatment seeking adults score higher on the RIES than non-treatment seeking adults; intrusion (29.4 ± 6.3 treatment / 15.3 ± 8.4 non-treatment), avoidance (24.2 ± 7.6 treatment / 9.8 ± 8 non-treatment).

<sup>a</sup> This percentage concerns the whole sample, including bereaved of vehicular homicide.

<sup>b</sup> Per ethnicity: Caucasian: 47%, African American: 33%, Hispanic: 16%, Native American: 1%, Asian American: 1%.

<sup>c</sup> Sex and ethnicity are not mentioned.

**Table 1. (continued)**

Authors	N total / N homicide (%)	Population	Sample Type and Recruitment Strategy	Study Design and Comparison Group	Average time since homicide	Method and Quality	Outcome measure and Risk factors	Results
Zinzow Rheingold Byczkiewicz Saunders Kilpatrick (2011)	1753 / 268 <sup>r</sup> (15.3%)	Close friend: 64% Immediate Family member: 11%	National representative sample, follow-up young adults from the original National Survey of Adolescents.	Cross sectional <sup>s</sup> Victims of other personal violence ( <i>n</i> = 653)	Not mentioned	Structural interview items that follow the DSM-IV-TR criteria A1	Past six month PTSD	15% of homicide bereaved met criteria for all 3 PTSD symptom clusters, compared to 8% among violence victims.  Homicide bereaved were more likely than victims of other violence to meet criteria for 2 or 3 symptom clusters.
Zinzow Rheingold Hawkins Saunders Kilpatrick (2009)	1753 / 169 (9.6%)	Male: 41% Female: 59%  Ethnically divers <sup>v</sup>		Vehicular homicide ( <i>n</i> = 99) and non-victims ( <i>n</i> = 1485)		A3	PTSD Depression Drug use Alcohol use	Homicide bereaved were significantly more likely than non-victims to report past year PTSD symptoms. (OR = 1.88), were at greater risk for past year depression (OR = 1.64) and drug abuse/dependence (OR = 1.77).

<sup>r</sup> The authors assume that the number of 268 participants represents homicide survivors, as well as vehicular homicide. In their article, Zinzow et al. ask participants whether their family member or close friend is murdered or killed by a drunk driver. The results of this question, in terms of number of homicide survivors and number of vehicular homicide is not mentioned. In their article of 2009, they do report the number of homicide survivors (*n* = 169) and vehicular homicide (*n* = 99). This adds up to *n* = 268.

<sup>s</sup> While the sample type is a follow-up of young adults from the original National Survey of Adolescents, the study examines PTSD symptoms at one point in time and is therefore cross-sectional.

<sup>t</sup> This percentage concerns the whole sample.

<sup>u</sup> Per ethnicity: Caucasian: 67%, African American: 17%, Hispanic: 9%. This percentage concerns the whole sample.

<sup>v</sup> Per ethnicity: Caucasian: 41%, African American: 41%, Hispanic: 9%, Native American: 2%, Asian American: 4%.

Homicide-related psychopathology assessed across studies includes PTSD, depression, CG, and substance abuse. As can be seen in Table 1, the included studies differed greatly in terms of sample size and type, such as national representative sample or treatment seeking sample, recruitment strategy, study design, time since loss and method of assessing psychopathology. Direct comparisons between studies are therefore not possible and would lead to an oversimplification of the data presented. Instead of a generalization across studies, the studies are compared with each other on an individual level. Before the results will be presented, the methodological differences between studies are described in more detail.

### **Methodological Differences Between Studies**

Mean time since loss ranged from 4 months to 16.6 years across studies. The number of participants in individual studies ranged from 15 to 333. Seven studies utilised a cross-sectional design and one was longitudinal. Regarding the samples, three national representative samples were used as was one treatment-seeking sample and four community based samples. Six studies used a mixed sample of family members, friends and spouses and two described a subpopulation of parents or siblings. Seven studies used control groups; non-victims, victims of interpersonal violence or individuals bereaved of other violent loss such as suicide, vehicular homicide or accidents. Psychopathology among adults was assessed, as well as among children. Six samples were ethnically diverse; the majority of the participants were Caucasian or African American, one sample was homogenous (African American) and one sample did not report ethnicity. To assess psychopathology, five studies used interviews and three used questionnaires.

### **PTSD Prevalence**

The prevalence of current PTSD ranged from 5.2% to 6%. Lifetime prevalence of PTSD ranged from 19.1% to 71% across studies. The study with the highest prevalence of PTSD was conducted in a community based sample of bereaved adolescents and adult family members, recruited by a review of court cases prior to 1988 in South Carolina, U.S. In this sample, 71% reported lifetime PTSD (Freedy, Resnick, Kilpatrick, Dansky, & Tidwell, 1994). Lifetime PTSD could include symptoms of PTSD prior to the homicide, caused by another trauma. In the study with the longest time span since loss, 16.6 years post loss, a prevalence of 19.1% was found among an adult national representative sample, recruited by a random telephone survey as part of an epidemiological study (Amick-McMullan, Kilpatrick, & Resnick, 1991). The shortest time span measured was four months post loss (Murphy et al., 1999). In a community based sample of 17 predominantly Caucasian parents, PTSD prevalence was 60% among mothers and 40% among fathers. When measuring PTSD four months post loss, only individuals with acute and chronic, but not those with delayed PTSD were included. The percentage found by Murphy et al. (1999) could therefore be an underestimation of PTSD prevalence, because individuals with delayed onset of PTSD were not included.

Burke, Neimeyer, and McDevitt-Murphy (2010) assessed PTSD 1.75 years post loss

using the PTSD CheckList-Civilian Version in a community based sample of 54 African American parents, siblings, adult children, and spouses, recruited by a religious organisation that offers assistance to homicidally bereaved individuals. The average scores of the participants (36.59) is below the cut off score of 50 for caseness of PTSD as proposed by Weathers, Litz, Herman, Huska, and Keane (1993). In the same sample, a prevalence of 18.5% for PTSD was found (McDevitt-Murphy, Neimeyer, Burke, & Williams, 2012).

Among a national representative sample of 333 ethnically diverse family members, close friends, and other relatives, aged 12-17 years, 6% met criteria for current PTSD (Rheingold, Zinzow, Hawkins, Saunders, & Kilpatrick, 2012). Time since loss was not reported in this study. In a national representative sample of 268 family members and friends, 15% met all three PTSD clusters (Zinzow, Rheingold, Byczkiewicz, Sauders, & Kilpatrick, 2011). The only study with a treatment seeking sample found treatment seeking individuals to score higher on the Impact of Event Scale-Revised (IES-R) than non-treatment seeking individuals (Rynearson, 1995).

### **Prevalence of Complicated Grief, Depression, and Substance Abuse**

Using a community based sample of 54 bereaved African American parents, siblings, adult children, and spouses, Burke et al. (2010) assessed CG 1.75 years post loss using the Inventory of Complicated Grief-Revised (Prigerson & Jacobs, 2001). The average scores of the participants (79.61) is below the cut off score of 90 for CG as proposed in 2003 (Boelen, van den Bout, de Keijser, & Hoijsink, 2003).

Burke et al., (2010) found a mean score of 15.43 on the Beck Depression Inventory II in the same sample (Beck, Steer, & Brown, 1996). Compared to cut-off scores established for psychiatric outpatients (Beck, Steer, & Garbin, 1988), this score is higher than a minimal depression (cut off 10.9), but lower than a mild depression (cut off 18.7). In the same sample, 53.7% scored positive for at least mild depression and 54.5% for CG (McDevitt-Murphy et al., 2012). Furthermore, a pattern of comorbidity was found; six months or more post loss, nearly all PTSD positive cases also screened positive for mild level depression and CG (McDevitt-Murphy et al., 2012).

In a national representative sample of young homicidally bereaved (12-17 years), a prevalence of 8% was found for past year depression (Rheingold et al., 2012). Mean time post-loss was not reported in this study. In a community based sample of 15 African American or Latino siblings, aged 7-18 years, 80% had developed a psychological disorder 5.4 months post-loss, compared to 10% in the healthy control group. Most common were comorbid depression, PTSD, and anxiety disorder (Freeman et al., 1996).

Very few studies have reported data on substance abuse. In a national representative sample of young adults (12-17 years), a prevalence of 10% past year alcohol- and 14% past year drug use was found (Rheingold et al., 2012).

### **Course of Symptoms over Time**

In a cross-sectional study with family members and close friends of the victim, no relation was found between PTSD symptom severity and time since loss, on

average 16.6 years post loss (Amick-McMullan et al., 1991). In a longitudinal study in a community based sample of African American parents, spouses, siblings, and other family members on average 1.67 years post loss, a significant decrease was found in symptom-levels of depression and complicated grief over the 6-month study period, but not in PTSD symptoms (Williams et al., 2012). In the same sample, participants scored higher on PTSD and anxiety within the first two years post loss, than later in time. Time since loss was not associated with symptom-levels of CG or depression (McDevitt-Murphy et al., 2012).

### **Homicidal Bereavement Compared to Other Violent Loss**

Six studies compared psychopathology levels between homicidally bereaved individuals, individuals confronted with other violent losses, victims of violence, and non-victims. Almost 17 years post loss, no significant difference was found in PTSD scores between the homicidally bereaved and individuals bereaved of alcohol related vehicle accidents in a national representative sample (Amick-McMullan et al., 1991). In a community based sample three years post loss, no significant difference was found in PTSD scores between the homicidally bereaved and victims of physical or sexual assault (Freedy et al., 1994). In a longitudinal study, twice as many parents whose children were murdered met PTSD criteria two years post loss compared with parents who lost their child due to accident or suicide (Murphy et al., 1999). Five years post-loss, no difference in the number of individuals meeting PTSD criteria was found between individuals bereaved due to homicide, accident or suicide (Murphy, Johnson, Chung, & Beaton, 2003a).

In a national representative sample, young homicidally bereaved individuals (12-17 years) were compared with victims of vehicular homicide, victims of personal violence, and non-victims. Homicidally bereaved victims were significantly more likely than non-homicidally bereaved victims to report past year PTSD symptoms (OR=1.88) and were at greater risk for past year depression (OR=1.64) and drug abuse/dependence (OR=1.77) (Zinzow, Rheingold, Hawkins, Saunders, & Kilpatrick, 2009). Prevalence rates of PTSD, depression, and drug and alcohol abuse were all lower for the homicidally bereaved than for individuals bereaved due to vehicular homicide (Rheingold et al., 2012). The homicidally bereaved were significantly more likely than victims of other violence to meet criteria for two or three PTSD clusters (Zinzow et al., 2011).

## **Discussion**

This article reviewed evidence regarding the nature, prevalence, and course of psychopathology among homicidally bereaved individuals. Eight studies (thirteen references) were found, describing prevalence-rates of PTSD, depression, CG, and substance abuse in homicidally bereaved individuals. Prevalence of lifetime homicide-related PTSD ranged from 19.1% to 71% across studies. Current PTSD ranged from 5.2% to 6%. Whereas a cross-sectional study found no relation between PTSD



symptoms and time since loss, a longitudinal study found a significant decrease in levels of depression and CG over the 6-month study period, but did not find changes in PTSD symptoms. The reviewed literature is inconclusive regarding the severity of psychopathology among the homicidally bereaved compared to non-homicidally bereaved victims, victims of interpersonal violence or individuals bereaved by suicide, accident or vehicular homicide. Based on the findings in this review, it cannot be stated what form of psychopathology is most experienced by homicidally bereaved individuals. Included studies suggest that PTSD is most frequent. Yet, this conclusion may represent an overestimation since PTSD was measured in all eight studies, whilst depression, CG, and substance abuse were measured in only four, two and one study, respectively.

As pointed out in the introduction, many studies suggest that homicidally bereaved individuals represent a highly traumatized population. There seems to exist a large discrepancy between estimated rates of psychopathology related to homicidal loss, as suggested in scientific literature, and the low number of studies devoted to this problem. This review suggests that homicidal loss is generally associated with increased risk of adverse mental health outcomes, including PTSD and CG. The extent to which these results can be generalized to the population of homicidally bereaved individuals is limited, due to diversity in sex, age, and ethnicity across studies. The samples in six studies were predominantly composed of women, which is of specific interest given the literature showing that women are more likely to experience CG (Kersting, Brähler, Glaesmer, & Wagner, 2011) and PTSD (Komarovskaya, Loper, Warren, & Jackson, 2011). The prevalence of psychopathology among men could therefore be lower and should be further examined. In one ethnically homogenous sample, a relatively high prevalence of CG and mild depression among African Americans adults was found. Women with an African American background, living in a large city in the Mid-South of the United States were especially at risk for negative mental health outcomes if they had a low income, frequent contact with the victim before the homicide, and reported more negative relationships with others. Older African American women, with large support systems and grief specific support had a lower risk of PTSD and CG. In one ethnically diverse sample of Americans children (12-17 years), no difference in prevalence of PTSD or depression was found between Caucasian and African Americans. Replication of this study would imply a better generalizability of the prevalence rates of these disorders found among young Caucasian or African American populations living in the United States. Other studies did not compare different ethnicities or describe the ethnic distribution for the whole sample, including non-homicidally bereaved individuals. Based on the differences in study populations, results regarding mental health outcomes after loss by homicide cannot as such be generalized to other homicidally bereaved populations.

### **Limitations**

The current review has a number of limitations, including those related to the included studies. The study with the highest prevalence rate made no distinction between pre-homicide and post-homicide related psychopathology (Freedy, et al.,

1994). This limitation is common in bereavement research, but has to be taken into account when interpreting the results. Part of the psychopathology presented here, such as lifetime PTSD, could have developed following other, pre-homicide, events. Therefore, it is unknown whether the psychopathology mentioned by Freedy et al. is homicide-related.

Several studies did not distinguish between psychopathology in individuals bereaved by homicidal death and individuals bereaved by other causes of deaths. For example, individuals bereaved by homicide, suicide, and accidents are aggregated in a number of studies (Murphy et al., 1999, 2003a, 2003b). Yet, it cannot be ruled out that the various types of violent deaths result in meaningful differences in the types of symptoms that are elicited in the bereaved. In addition, few studies have compared the homicidally bereaved to individuals bereaved from natural losses.

In addition to the limitations of the particular studies, several limitations of this review have to be taken into account when considering the conclusions. First, this review was restricted to research from English speaking countries. It is possible that the bereaved in non-Western cultures deal differently with homicide and bereavement and therefore experience different psychopathology. Second, only studies regarding individual violence were taken into account, excluding homicide committed in a context of collective violence against groups. Future research should examine the consequences of collective violence for bereaved individuals, such as war victims.

## **Recommendations**

Our review suggests important considerations for further research. To enhance knowledge regarding psychopathology experienced by homicidally bereaved individuals in comparison to bereavement from natural causes, future research should not only differentiate between various causes of violent death but also compare bereavement following homicidal loss versus natural deaths. To improve insight in the course of psychopathology over time, more longitudinal studies are needed. Ideally, an international cooperation of researchers working in this field should use the same time interval and methodology, making comparisons between studies and subpopulations possible. As in any field of enquiry, researchers should use validated instruments to assess psychopathology. This is especially important in a research field like this, where every one can imagine the emotional burden of homicidal loss and claims about the degree to which individuals must be suffering are easily made. During the search, five potentially eligible studies had to be excluded because they used questionnaires which do not provide a diagnosis included in the DSM-IV but instead used assessments, such as the Impact of Event Scale or Symptom Checklist-90 (Amick-McMullan et al., 1989; Mezey, Evans, & Hobdell, 2002; Range & Niss, 1990; Rynearson & McCreery, 1993; Thompson et al., 1998). For future studies, researchers are advised to use structured clinical interviews for DSM-IV, or, from 2013 onwards, DSM-5, in order to assess psychopathology.

During this search, five dissertations regarding psychopathology of the homicidally bereaved were found (Gerber, 1995; Sharpe, 2007; Stiehler, 1995; Stuckless, 1998;

Thompson, 1995). These studies could have provided relevant information, but were excluded because they were not published in peer-reviewed journals. Authors are therefore advised to publish their findings in peer-reviewed journals, making results available to a larger public.

When reviewing the literature, many synonyms used to describe a population of homicidally bereaved were found. To cover as many synonyms, we used the words \*surviv\* or \*bereav\* or grie\*, thereby including terms such as family-survivor(s), survivor-victim(s) and grieving family(ies). During the search, at least eleven synonyms for individuals bereaved of homicide were found; *bereaved*; *victim*; *secondary victim* (Peay, 1997); *loved one* (Zinzow et al., 2009); *homicide victim(s)*; *homicide survivor(s)* (Zinzow et al., 2011); *co-victims of homicide* (Armour, 2002); *surviving family members* (Amick-McMullan et al., 1991); *homicidally bereaved individuals* (McDevitt-Murphy et al., 2012); *families of homicide victims* (Horne, 2003) and *family survivors of homicide victims* (Amick McMullan et al., 1989). Use of many synonyms makes it difficult to find relevant studies. Moreover, some terms lack specificity and clarity and could easily be misinterpreted. The first four (*bereaved*, *victim*, *secondary victim*, *loved one*) do not cover the death cause. The next four (*homicide victim(s)*, *homicide survivor(s)*, *co-victims of homicide*, *surviving family members*) can refer to the victim of the homicide itself, and not to the individuals left behind, or to the victims who survived a homicide attempt. The last two (*families of homicide victims*, *family survivors of homicide victims*) cover only family members and not spouses or friends of the victim. To avoid different interpretations and to facilitate the search of relevant articles, we suggest an agreement on a single term to describe this population and recommend the term *homicidally bereaved*. In our opinion, this term is the least ambiguous and accounts better for the cause of death, as well as the relationship to the victim.

## Implications for Practice, Policy, and Research

- As in every research area, researchers need to use valid and reliable outcome measures. This is especially important in a research field like this, where most can imagine the emotional burden of homicidal loss and statements about how much individuals must be suffering are easily made.  
Researchers are therefore recommended to use structured clinical interviews for DSM-IV or equivalent instruments to assess disorders.
- Studies cannot be easily compared because of different sample types, outcome measures, measuring instruments, sample sizes, average time since loss, and type of relation between the bereaved and victim. Policymakers and researchers should therefore give a nuanced image of homicide-related psychopathology, instead of an oversimplified one.
- At least eleven synonyms were found in the literature to describe a population of homicidally bereaved. To avoid different interpretations of a synonym and to make it easier to find relevant articles, we suggest to use one term to describe

this population and recommend the term *homicidally bereaved*. *Homicidal bereavement* can be used to refer to the event.

- Research should not only differentiate clearly between the bereaved of different violent causes of death, but also compare psychopathology after a violent loss with natural loss.
- Research and knowledge about the nature of psychopathology experienced by the homicidally bereaved can inform decision making regarding psychotherapy.
- PTSD does not seem to diminish over time. More follow-up studies are needed to investigate the influence of time on psychopathology.

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*Note.* The references with an \* are included in Table 1.

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